WE CLAIM:

1. A drain-extended MOS transistor in a semiconductor wafer of a first conductivity type, comprising:
   a first well of said first conductivity type, operable as the extension of the transistor drain of said first conductivity type, and covered by a first insulator having a first thickness;
   a second well of the opposite conductivity type, intended to contain the transistor source of said first conductivity type, and covered by a second insulator thinner than said first insulator, said first and second wells forming a junction that terminates at said second insulator;
   said first well having a region in the proximity of said junction termination, which has a higher doping concentration than the remainder of said first well and extends not deeper than said first insulator thickness.
2. The transistor according to Claim 1 wherein said first insulator thickness is in the range from 450 to 600 nm.
3. The transistor according to Claim 1 wherein said second insulator is less than 30 nm thick.
4. The transistor according to Claim 3 wherein said second insulator thickness is in the range from 1 to 15 nm.
5. The transistor according to Claim 1 wherein said first conductivity type is p-type and said opposite conductivity type is n-type.
6. The transistor according to Claim 1 wherein said higher doping concentration in said first well region reduces the transistor drain resistance so that the drain current is increased to approximately twice the value

it had without said higher doping concentration.

7. The transistor according to Claim 1 wherein said doping concentration of said remainder of said first well determines the breakdown voltage of said transistor.

8. The transistor according to Claim 1 further comprising in said wafer a buried layer of said opposite conductivity type, said layer separating said wells from the remainder of said wafer.

9. A drain-extended MOS transistor in a semiconductor wafer doped in a first conductivity type, comprising:

a buried layer of the opposite conductivity type;

an epitaxial layer on top of said buried layer, said epitaxial layer doped in said first conductivity type at a concentration lower than said wafer;

a first well of said first conductivity type, operable as the extension of the transistor drain of said first conductivity type;

a second well of the opposite conductivity type, intended to contain the transistor source of said first conductivity type, said second well forming a junction with said epitaxial layer, said junction terminating at the surface of said epitaxial layer;

said first well and portions of said epitaxial layer covered by a first insulator having a first thickness;

said second well and the remainder of said epitaxial layer covered by a second insulator thinner than said first insulator, said second insulator also protecting said junction termination;

said epitaxial layer having a region in the proximity of said junction termination, which has

a higher doping concentration than the remainder of said epitaxial layer and extends not deeper than said first insulator thickness.

10. The transistor according to Claim 9 wherein said first insulator thickness is in the range from 450 to 600 nm.

11. The transistor according to Claim 9 wherein said second insulator is less than 30 nm thick.

12. The transistor according to Claim 11 wherein said second insulator thickness is in the range from 1 to 15 nm.

13. The transistor according to Claim 9 wherein said first conductivity type is p-type and said opposite conductivity type is n-type.

14. The transistor according to Claim 9 wherein said higher doping concentration in said epitaxial layer region reduces the transistor drain resistance so that the drain current is increased to approximately twice the value it had without said higher doping concentration.

15. The transistor according to Claim 9 wherein said doping concentration of said remainder of said epitaxial layer determines the breakdown voltage of said transistor.

16. A drain-extended MOS transistor in a semiconductor wafer of a first conductivity type, comprising:

a first well of the opposite conductivity type, operable as the extension of the transistor drain of said opposite conductivity type, and covered by a first insulator having a first thickness;

a second well of said first conductivity type, intended to contain the transistor source of said opposite conductivity type, and covered by a second insulator thinner than said first insulator, said first and second wells forming a

junction that terminates at said second insulator;

said first well having a region in the proximity of said junction termination, which has a higher doping concentration than the remainder of said first well and extends not deeper than said first insulator thickness.

17. The method according to Claim 16 wherein said first insulator thickness is in the range from 450 to 600 nm.

18. The method according to Claim 16 wherein said second insulator thickness is less than 30 nm.

19. The method according to Claim 18 wherein said second insulator thickness is in the range from 1 to 15 nm.

20. The method according to Claim 16 wherein said first conductivity type is p-type and said opposite conductivity type is n-type.